



# REGULATING DEVELOPMENT NEAR RAIL

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April 2023 Version  
Denver Councilwoman At-Large Debbie Ortega

# OUTLINE OF PRESENTATION

- **FEMA recommendation**
- **Overview of study findings**
- **Overview draft ordinance**
- **Discussion**



# RESPONSIBILITY TO PROTECT

FEMA Comprehensive Preparedness Guide, November 2010, 1<sup>st</sup> Sentence of 1<sup>st</sup> Chapter:

*“The elected and appointed leaders in each jurisdiction are responsible for ensuring that necessary and appropriate actions are taken to protect people and property from any threat or hazard”.*

The **2019 Colorado Local Emergency Planning Committee Annual Conference** was hosted by Colorado Division of Homeland Security and Emergency Response. An attorney who counsels Colorado’s Emergency Planning Committee advised attendees that, in a post-Hurricane Katrina environment, elected officials are legally responsible to ensure actions are taken to protect people and property and he directed attendees to review the above-referenced **FEMA Guide**.



# HAZARDS

An aerial photograph showing a massive industrial disaster site. In the foreground, a large plume of white smoke or steam rises from a pile of debris. The ground is covered in charred remains, twisted metal, and scattered equipment. In the background, a residential area with houses and parked cars is visible, suggesting the proximity of the disaster to populated areas. The overall scene is one of significant destruction and environmental hazard.

Mirroring national trends, Denver has seen a dramatic increase in rail shipments of flammable liquids, principally crude oil, related liquids, and ethanol. Denver's Office of Emergency Management and Homeland Security has reported:

- Up to over 80,000 hazmat rail car shipments per year through Denver.
- Up to over 200 hazmat rail car shipments on average per day through Denver.
- Flammable liquids account for over half of hazmat shipments through Denver by rail.

# FREIGHT RAILROAD TRAFFIC – HAZARDOUS MATERIALS

## 2021 HAZARDOUS MATERIAL TRAIN CARS

- **4 percent of all freight train cars** in Denver carry hazardous materials
- 38 freight trains pass through Denver daily

Daily	280
Monthly	8,524
Yearly	102,280

## EST. 2025 HAZARDOUS MATERIAL TRAIN CARS W/ UINTA BASIN RWY

- **14 percent of all freight train cars** in Denver carry hazardous materials
- 45 daily freight trains pass through Denver

Daily	1,061
Monthly	31,954
Yearly	383,440

# NOTABLE TRAIN DERAILMENTS SINCE THE EAST PALESTINE OH DERAILMENT

- **Feb. 3:** Norfolk Southern train in East Palestine OH, 38 cars derailed, and 12 more cars fire damaged, toxic vinyl chloride fueled large fire for days, town evacuated.
- **Feb. 16:** 30 cars derailed from a Norfolk Southern train with 135 cars in Van Buren MI.
- **Feb. 21:** Union Pacific 31 car derailment in Gothenburg NE. *Same day as LUTI Brief*
- **Feb 28:** 6 cars derailed, 1 carrying 30,000 gal. of propane, in Bradenton FL.
- **Mar. 6:** 28 cars derailed from a Norfolk Southern 212 -car train outside Springfield OH.
- **Mar. 8:** All 4 locomotives and 9 cars derailed from a CSX train in WV, spilling fuel into a river and a resulting fire, with 3 crew members injured.
- **Mar. 9:** 30 cars in a Norfolk Southern train derailed in Alabama.
- **Mar. 26:** 31 of 70 cars derailed near Wyndmere ND, including cars carrying ethylene glycol and propylene.
- **Mar. 26:** 2 cars from a Canadian Pacific train derailed in Chicago suburb Franklin Park, adjacent to O'Hare International Airport.
- **Mar. 27:** 55 cars derailed with fuel leaked in San Bernadino County CA.
- **Mar. 30:** BNSF derailment led to evacuation of Raymond MN as 4 derailed cars carrying ethanol ruptured causing a fire that was still burning 14 hours later.
- **April 2:** 25 cars derailed along the Clark Fork River near Paradise MT.
- **April 8:** A locomotive and 11 cars derailed from a Norfolk Southern train near Jasper AL, spilling fuel.



# FREIGHT RAILROAD ACCIDENTS

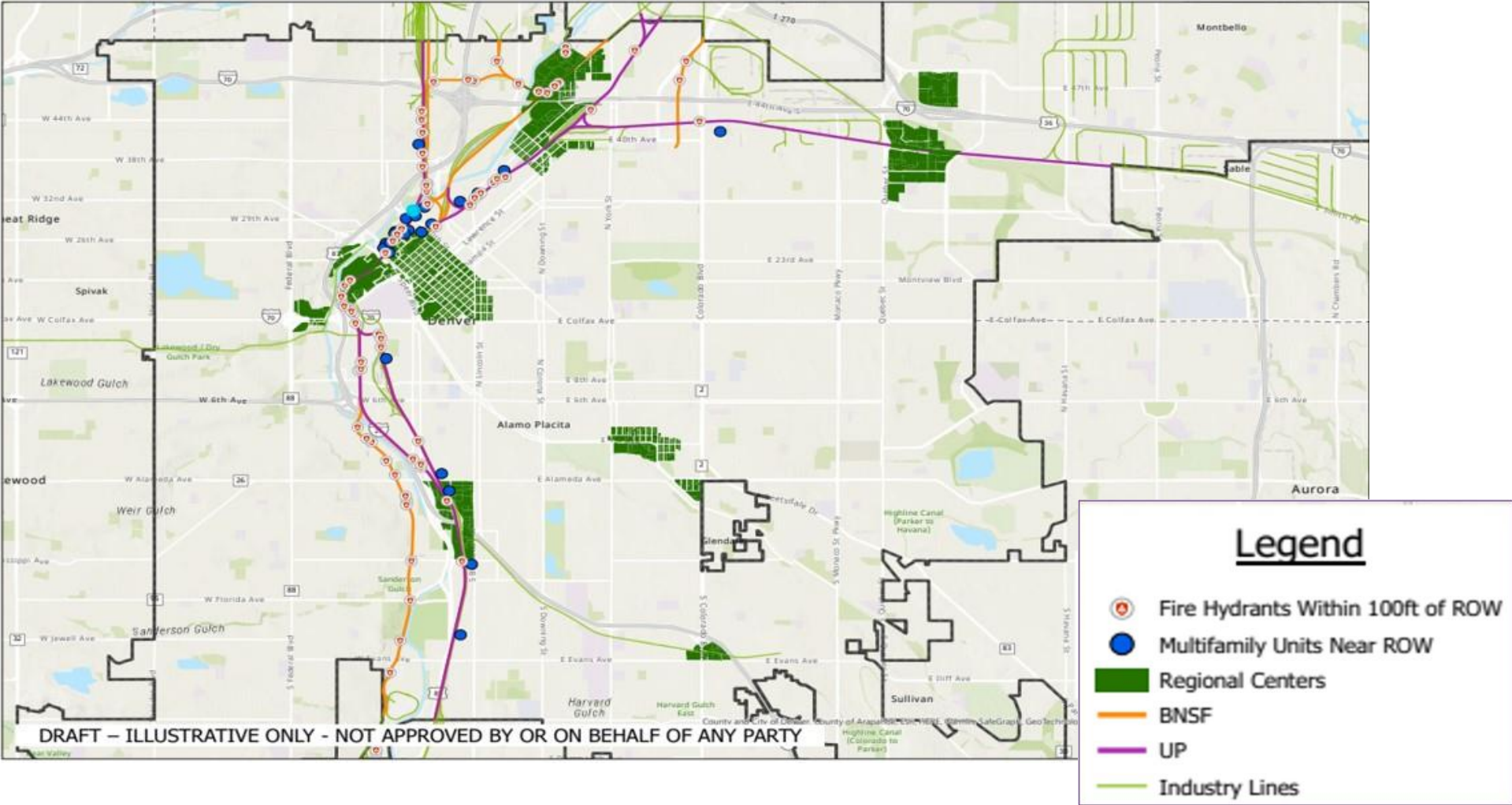
How Denver Ranks Vs. Cities of Similar Size\*

Total Railroad Accidents/Incidents

\*Non-metro city limit populations of 630,000 to 750,000

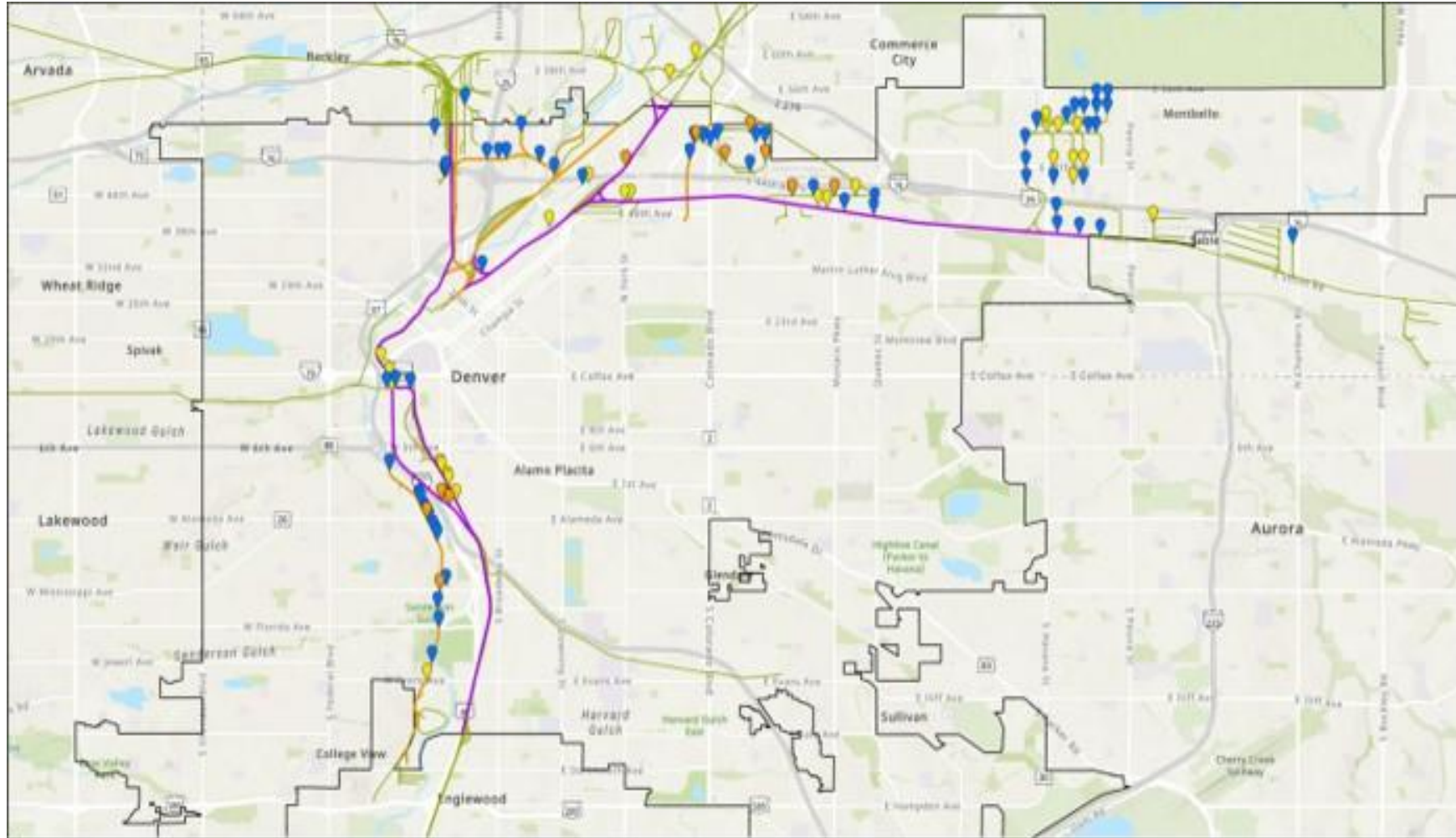
	City	State	Total number of accidents over the last 5 years	Total number of grade crossings
1	Memphis	TN	26	302
2	Seattle	WA	17	248
3	Nashville	TN	14	200
<b>4</b>	<b>Denver</b>	<b>CO</b>	<b>12</b>	<b>212</b>
5	Detroit	MI	10	190
6	Portland	OR	8	229
7	El Paso	TX	8	89
8	Oklahoma City	OK	5	138
9	Las Vegas	NV	1	22
10	Washington D.C.		1	7

# FUTURE GROWTH AND FREIGHT RAILROAD PROXIMITY





# GRADE CROSSING ACCIDENT RISK BY LOCATION



- Risk Class**
-  1 - High
  -  2 - Medium
  -  3 - Low
  -  UP Rail
  -  BNSF Rail
  -  Industry Lines

# ENGINEERING RISK ANALYSIS RECOMMENDATIONS



## CHAPTER 8 – SUGGESTED GUIDELINES AND CONSIDERATIONS

Table 8-1 presents overall suggested considerations based on the analysis from the study, along with some potential sources of funding for capital project improvements discussed in Section 8.1.

**Table 8-1. Overall Suggested Guidelines**

Guideline Considerations	Lead City Agency	Responsible Parties	Time Horizon
Develop and implement hazard management plans for railroad corridors	OEM	OEM	Short Term
Conduct a detailed study “parcel by parcel” of emergency access along the railroad ROW and identify areas / projects to enhance access	CPD	CPD	Short Term
Develop and implement evacuation plans in the event of a hazardous materials release in high-risk areas	OEM	OEM	Short Term
Support DFD staffing, training, and equipment for response to rail incidents.	DFD	DFD	Short Term
Provide education and outreach to emergency service responders and adjacent property owners/residents about railroad hazards and response – information should be updated at least annually, but more frequently if significant changes occur. Consider large-scale training exercises to simulate a train derailment with a large hazardous material on-board on a regular basis. Include railroad personnel on regular walkthroughs so that first responders are familiar with the infrastructure/areas prior to an event.	DFD	DFD, DPD	Short Term
Provide education to CCD staff about CCD’s recently adopted Hazard Mitigation Plan (2022) and ensure that the plan is considered when working in areas adjacent to railroad corridors	OEM	OEM	Short Term
Review current vegetation management requirements and enforcement in areas adjacent to railroad corridors and explore enhancements, such as xeriscaping that is fire-resistant.	CPD	City for Public Property, Private Property Owners	Short Term
Ensure that city and emergency response personnel have real-time alerts on the Rail Crossing Locator app where first responders can request to be notified in advance of a train that is going to go through Denver carrying certain petroleum products in a quantity of 1 million gallons or more. This will allow for proactive preparations in case of a derailment/spill.	DFD	DFD, OEM	Short Term
Ensure that existing fire hydrants near railroads are accessible to the railroad ROW	DFD	DFD, CPD, DOTI, PUC	Short Term
Consider designating projects as pilot projects to test mitigation measure effectiveness.	DOTI	DOTI	Short Term

Guideline Considerations	Lead City Agency	Responsible Parties	Time Horizon
Consider guidelines or requirements for new development along railroad ROW to reduce the effect of derailments, especially in areas with a higher risk of derailment. Development of requirements or guidelines for development should be informed by peer city research, an analysis of impacts and costs on development, and stakeholder outreach. Potential guidelines could include: <ul style="list-style-type: none"> <li>Locating surface parking, access aisles, landscape buffers, or other non-structural features adjacent to railroad ROW to reduce the effect of derailments</li> <li>Requiring reinforced columns in specific locations on structures constructed adjacent to railroad ROW when other mitigation is not feasible</li> <li>Elevating air intakes and adding chemical sensors to HVAC equipment adjacent to railroad ROW</li> <li>Using berms or walls to reduce the effect of derailments in high-risk locations</li> <li>Elevating the first occupied floor above the railroad ROW grade</li> </ul>	CPD	CPD, (see also DOTI and PUC below for crossings)	Medium Term
Identify areas with sensitive environmental resources adjacent to railroad corridors and work with railroad owners to add protection strategies, such as guard rails	DPHE	DPHE	Medium Term
Add fencing along the railroad ROW, beginning with areas where higher concentrations of pedestrians and encampments occur	Railroads, DOTI	DOTI	Medium Term
Implement grade crossing improvements as described in this report	DOTI	DOTI, PUC	Medium Term
Consider adding pedestrian overpasses at areas identified a high risk for pedestrians	DOTI	DOTI, CPD, PUC	Medium Term
Work with railroads to repair/upgrade switches, tracks, and other track-related infrastructure causing derailments	DOTI	Railroads, DOTI	Medium Term
Grade-separate high-risk crossings – underpasses or overpasses	DOTI	DOTI, Railroads, CDOT, PUC	Long Term
Place freight rail lines in below-ground (open-air) trenches with access control, fire hydrants, fencing, and intrusion detection alarms	DOTI	Railroads, DOTI	Long Term
Work with railroads to eliminate higher-risk switches, wye tracks, and other higher-risk track conditions	DOTI	Railroads, DOTI	Long Term
Consider incentivizing structural reinforcement of existing buildings along railroad ROW at high-risk locations	CPD	CPD	Long Term
Consider new freight rail lines or routes that direct trains with hazardous cargo away from densely populated areas	DOTI	Railroads, CDOT, DOTI	Long Term

DPH&E = Department of Public Health & Environment

CDOT = Colorado Department of Transportation

CPD = Community Planning & Development

DFD = Denver Fire Department

DOTI = Department of Transportation and Infrastructure

DPD = Denver Police Department

OEM = Office of Emergency Management

PUC = Colorado Public Utilities Commission

# ROAD AND RAILROAD RISK MITIGATIONS: MENU OF OPTIONS



- **Signs, signals & gates – cars & bike/ped**
- **Improve overhead street lighting**
- **Add delineators or medians**
- **Resurfacing, restriping, add curb and gutter**



- **Driveway & roadway relocation, consolidation, or closure**
- **Realign at-grade crossings**
- **Fencing, walls, or other barriers**
- **Grade-separate crossings**

# LAND USE RISK MITIGATIONS: MENU OF OPTIONS



- Fire/EMS staffing
- Fire/EMS equipment
- Fire hydrant positioning
- Fire/Emergency access
- Fire & sound “proofing”



- Land uses, types, densities, locations
- Building reinforcement
- Emergency egress plans & evacuation drills
- Site planning
- Others

# CHRONOLOGY OF STAKEHOLDER OUTREACH

- **Jan. 2020:** Met with River Mile.
- **Jul. 2022:** Workshop #1 with city agencies, city project team, and HNTB.
- **Aug. – Nov. 2022:** HNTB with Class 1 Railroads.
- **Oct. 2022:** Met with River Mile.
- **Nov. 2022:** Workshop #2 with city agencies, city project team, and HNTB.
- **Dec. 2022:** Briefing with ULI Urban Mobility and Development Committee.
- **Feb. 2023:** Multiple one-on-one meetings with city project team and various city agencies.
- **Feb. 2023:** Met with Ball Arena Redevelopment Team.
- **Mar. 2023:** Met with developers.
- **Mar. 2023:** Met with the Department of Transportation & Infrastructure (DOTI) Advisory Board.



# FREIGHT RAILWAYS ORDINANCE

## NEW ARTICLE XV, CHAPTER 10 OF DRMC

- Building permits requires a pre-application meeting with CPD and supporting agencies before applying for a zone use permit for a residential, commercial, campus, or sensitive use within 100 feet of freight railroad ROW (Freight Railway).
- Any permit or license within 100 feet of freight railroad ROW requires approval from CPD, DDPHE, DOTI, DFD, OEM and other agencies or departments deemed necessary.

# NEW ARTICLE XV, CHAPTER 10 OF DRMC CONT.

CPD may only issue a zone use permit for a residential, commercial, campus, or sensitive use within 100 feet of freight railroad ROW if the applicant produces:

- Analysis of emergency vehicle access to the freight rail ROW adjacent to the permitted use, conducted by DFD;
- Evacuation plan for occupied facilities within 100 feet of freight rail ROW approved by DFD;
- Documents demonstrating:
  - Structural reinforcement of buildings; or
  - Elevation of finish floor above freight rail ROW grade; or
  - Berms or walls between structure and freight rail ROW; or
  - Other mitigations that provide equivalent safety to reduce effect of derailment.

Requires annual reporting starting 2024 from CPD to City Council of permits issued and mitigations approved pursuant to this article, and permits denied and grounds for denial.

# ARTICLES & LINKS

## [The true dangers of long trains](#)

[Flammable freight trains pass through downtown Denver venues](#)

[Can you tell if a 'bomb train' is coming to your town? It's complicated](#)

[State AGs Urge US Supreme Court to Address Blocked Railroad Crossings/](#)

[Politicians are drumming up support \(literally\) for last-ditch campaign to block Uinta Basin oil trains in Colorado](#)

[Rural communities like East Palestine, Ohio, are at outsized risk of train derailments and the ensuing fallout](#)

[What risks do the freight railroads running through Denver pose to residents?](#)

[Lawsuit confronts proposed oil railroad in Utah's Uinta Basin](#)

[Neguse, Bennet, Hickenlooper back local CO challenge of Utah oil train project](#)

[After a decade, Debbie Ortega still fighting to put railway safety back on track](#)

[State and local officials press to increase rail safety regulations](#)

[Colorado congressmen cite Ohio train derailment in letter urging Forest Service to delay approval of Uinta Basin Railway](#)

[Uinta Basin Railway Environmental Impact Statement](#)

[Carman: Don't let the greedheads win on Uinta Basin Railway project](#)

[Railroad's plan to haul waxy crude through Colorado's mountains needs \\$2 billion in government-approved bonds](#)

[Utah rail line facing widespread Colorado opposition](#)

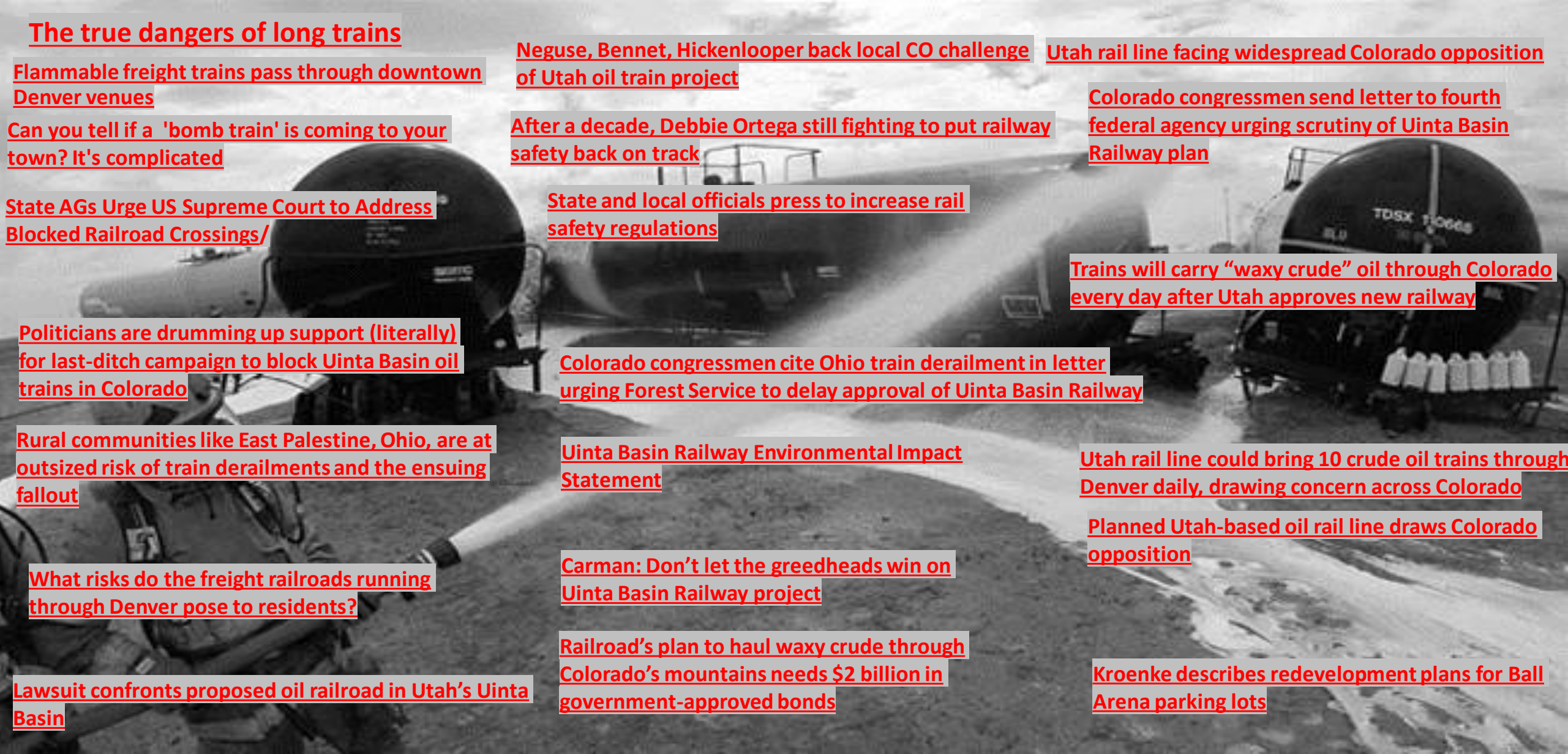
[Colorado congressmen send letter to fourth federal agency urging scrutiny of Uinta Basin Railway plan](#)

[Trains will carry "waxy crude" oil through Colorado every day after Utah approves new railway](#)

[Utah rail line could bring 10 crude oil trains through Denver daily, drawing concern across Colorado](#)

[Planned Utah-based oil rail line draws Colorado opposition](#)

[Kroenke describes redevelopment plans for Ball Arena parking lots](#)







## Anticipated schedule of the ordinance moving forward

- April 25 – LUTI Presentation
- May 2 - Mayor Council
- May 8 – First reading during City Council Meeting
- May 15 – Second reading during City Council Meeting

# QUESTIONS?



[ORTEGAATLARGE@DENVERGOV.ORG](mailto:ORTEGAATLARGE@DENVERGOV.ORG)



[HTTPS://BIT.LY/41JWXOK](https://bit.ly/41jwx0k)